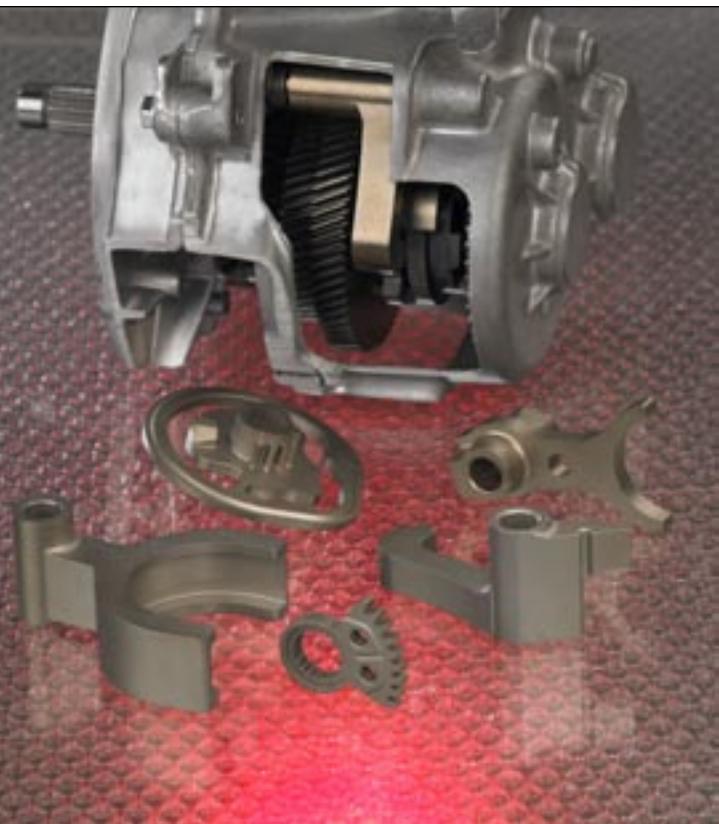


# FMS

## AWARDED FOR OUTSTANDING PM PART



**This assembly of five PM steel parts is used in an ATV transmission and was recognized by the MPIF.**

The Metal Powder Industries Federation (MPIF) presented FMS Corporation with the Outstanding Powder Metallurgy Parts Grand Prize in the lawn and garden/off-highway category for a complex assembly of five PM steel parts used in the transmission of an ATV.

The assembly consists of two shift forks, two sector gears and a park pawl. Four of the parts are made from PM sinter-hardened steel to a density of 7.2 g/cm<sup>3</sup> with a minimum ultimate tensile strength of 110,000 psi. One of the sector gears is made from 4300 steel with tensile strength of 160,000 psi and a 30 HRC minimum hardness. The parts were produced using the standard press

and sinter process.

The Outstanding PM Parts Awards are presented each year at the MPIF annual trade show PowderMet. John F. Sweet, president of FMS Corporation, took home the award for its "high level of complexity and high quality requirements. The level of complexity allows for many different dimensions to be held," he said.

"Innovation is the key. It was a good application of powder metallurgy in a new market."

FMS has won the award in different categories seven times since 1998. Of all FMS's winning parts, this one had the highest number of components in an assembly. "We have produced other assemblies," Sweet says. This was certainly the highest level of complexity we have taken on as a company."

He says, "The entire development took over a year."

The customer, Team Industries of Bagley, MN, settled on FMS and the PM process due to cost savings, which they estimated at 60 percent. "They considered machining and casting and were convinced that the powder metal method would be the most cost effective," Sweet says.

FMS specializes in powder metal component parts with full CAD/CAM gear design and inspection capability. Sweet touts the benefits of using PM for transmission parts compared with traditional machining methods. "The cycle time is lower, and there is little or no material waste. It's a very efficient process," he says.

He notes that PM is the fastest growing metalworking process, with gear manufacturing as an area that has expanded significantly in use, and the technology has improved. "The powder metal process continues to make inroads in the manufacture of gears in an efficient way," Sweet says. "Where it was once thought of as strictly a cost cutting measure to be used with low performance gears,

powder metallurgy continues to advance in material performance, and today we can compete in most high performance [applications], even 8620 carburized steel."

## American Broach

LAUNCHES NEW DIVISION,  
WELCOMES GM



**Leon Kozlov is the general manager of the American Gear Tools division of American Broach and Machine.**

Ken Nemec, president of American Broach and Machine Company (ABM), recently announced the creation of the American Gear Tools (AGT) division. AGT designs and delivers hob, shaper, shaving, milling, straight, spiral and bevel cutters and spline rolling racks. Engineering

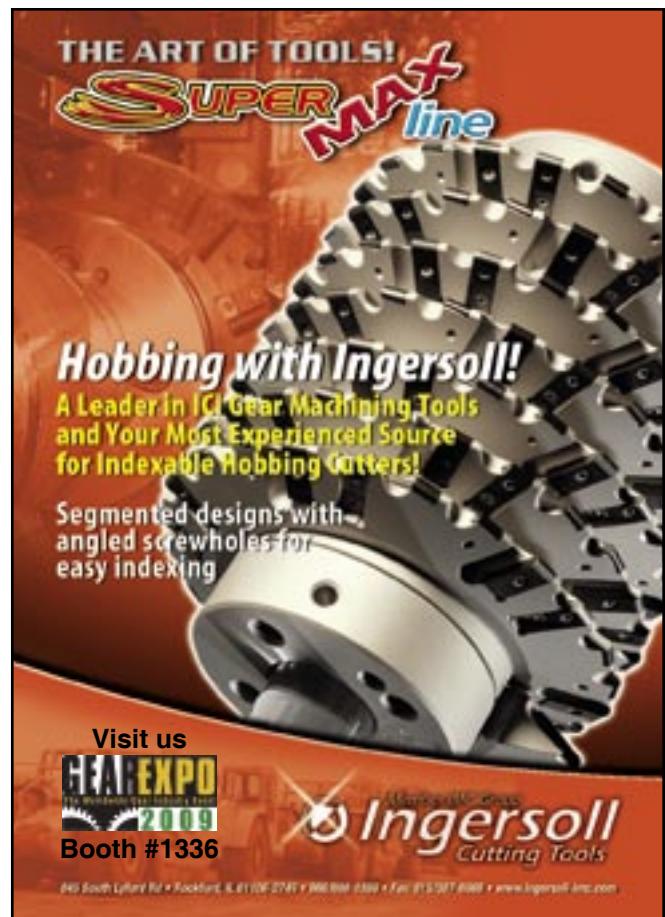
and inspection services, troubleshooting support, application enhancements and gear cutting tool regrinding services are the focus of the new division.

Leon Kozlov, formerly vice president and chief engineer of Barit International, joins AGT as general manager, as of September 8. Kozlov has more than 30 years of experience in the design and development of gear cutting tools.

"Not only has American Broach and Machine started a new division, we have hired a ringer," Nemec says.

The new division is a way for ABM to "complete the circle," Nemec says, and meet all the tooling needs of its gear producing customers.

**continued**



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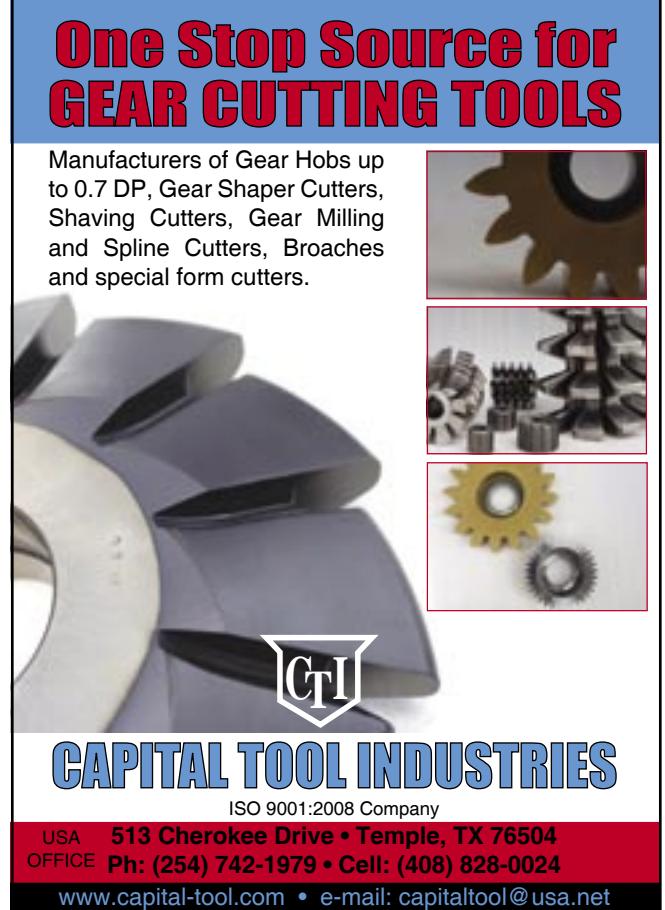
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GT09

### Correction.

*Regarding the technical paper appearing in our June 2009 issue, "The Effect of Start-Up Load Conditions on Gearbox Performance and Life Failure Analysis and Case Study," some revision is warranted.*

*The article uses the term "spalling," whereas the preferred nomenclature is "flake macropitting," as defined in ANSI/AGMA 1010-E95 (Ref. 1). Flake macropitting starts with a crack that extends from a surface origin in a fan-shaped growth pattern to form a triangular crater. Tip-to-root interference is a common root cause of flake macropitting.*

*Also, Figure 12 and associated text claim macropits grow in the slide direction. Actually, macropits grow opposite to the slide direction.*

#### Reference

1. ANSI/AGMA 1010-E95, "Appearance of Gear Teeth—Terminology of Wear and Failure," AGMA (1995).

—The Editorial Staff

"Leon is a great addition to ABM, adding even more depth and knowledge to the ABM team in Ypsilanti, MI. Leon speaks, reads and writes several languages including English and Russian. Leon is a degreed engineer, and his specialty is gear cutting tool design and application," Nemec says.

American Broach and Machine is exhibiting at Gear Expo in booth 716 and has extended an open invitation for visitors this fall to its Ypsilanti, MI facility to welcome Kozlov and tour the plant.

## Gear Technology

### ADDS AQUEOUS PARTS CLEANING SYSTEM

An environmentally friendly ultrasonic, aqueous-based parts cleaning system has joined the shop floor at Rancho Cucamonga, CA-based Gear Technology.

"This state-of-the-art system cleans machined components prior to first-article inspection points during the machining process and before final shipments are made to our customers," says Tom Marino, president of Gear Technology. "The multiple-tank process removes even the smallest particles and is capable of processing up to 6,000 parts per month.

"With in-house and environmentally responsible parts cleaning, we ensure our customers' precision machined gears and assemblies are shipped completely free of foreign object contamination and are received ready to use."

# Halifax Rack and Screw

## Invests in New Equipment

The Cincinnati North America distribution center for Halifax Rack and Screw Cutting Company of Cincinnati, OH and Brighouse, England has invested in 14.5 degree and 20 degree pressure angle gear racks in four-, six- and 12-inch lengths. The investment takes the form of two new pieces of gear rack manufacturing equipment and a stock inventory for the North American market. The equipment allows for quick turnarounds on standard and modified rack for clients in this region.

"HRS invested more than one million Euros in new state-of-the-art equipment last year for our Brighouse production facility," says Rich Easley, North American sales manager for HRS. "This investment ensures our continued ability to supply the highest quality gear racks and screws at competitive pricing. Our inventory additions will support the stimulus programs in U.S. construction."

**continued**

**Halifax Rack and Screw's facility in Cincinnati, OH has invested in two pieces of gear rack manufacturing equipment and an expanded stock inventory.**



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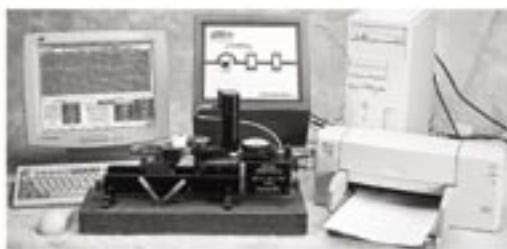
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## **NEWS**

## **Barit**

### **CHANGES OWNERSHIP, EXECUTIVE MANAGEMENT**

Dennis and Edward Moldavsky have purchased 20-year-old gear cutting tool provider Barit International Corporation. Dennis Moldavsky was formerly Barit's director of sales and is now the CEO. Edward Moldavsky is the president. The new executive positions were assumed in May, and the company remains at the Northbrook, IL headquarters.



**Yuriy Ardashnikov is chief engineer for Barit International.**

Barit was founded in 1989 by Alexander Polevoy. "When Rita (Polevoy) mentioned she was thinking about retiring and wanted to find a buyer for the company, I knew this was a great opportunity for my family to grow and improve an already successful family-owned business," Dennis Moldavsky says.

The Moldavskys' first course of action as new owners was to hire chief engineer Yuriy Ardashnikov, who has 22 years of experience in the industry, from designing geared power transmissions and mechanical drives to manufacturing support and quality control management. He brings Barit expertise in diesel engines, machine tools and custom gearing.

# Vision

## DOUBLING FLOOR SPACE

Vision Quality Components Inc. is moving to a facility twice as large as its previous space in the Clearfield Technology Park in Clearfield County, PA. Since opening its doors in January 2003, Vision has leased 10,000 square feet of space at the industrial park, and the new facility is only a few minutes from the former one, off Interstate 80 in Pennsylvania.

The new building is owned by Vision. It features 2,000 square feet of office space and 18,000 square feet of manufacturing space, so Vision can expand manufacturing capacity. Vision currently manufactures spur gears, helical gears and precision pump gears using the powder metallurgy process.

## Triumph Group

### AWARDED BELL HELICOPTER CONTRACT, PROMOTES MANAGEMENT

A multi-year supply agreement was made between the Triumph Group and Bell Helicopter. Under the agreement, the gear systems operations, located in Park City, UT and Macomb, MI will provide the main transmission assemblies for the 429 helicopter.

The agreement includes manufacturing, assembly/integration and testing of the transmissions in addition to design and engineering the test equipment.

**continued**

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The initial agreement spans five years with five one-year contract extension options. The estimated value exceeds \$363 million over the next 10 years.

“We are extremely pleased that Bell Helicopter chose Triumph to be a strategic supplier to this program,” says Richard C. Ill, chairman and CEO for Triumph. “We believe Triumph’s experience in providing cost effective solutions, our capacity to integrate complex bills of material and our commitment to meet or exceed stringent quality control requirements enabled us to win this business. We view this award as a significant milestone in our excellent relationship with Bell Helicopter and look forward to supporting this program.”

In other news from Triumph, Jeffry D. Frisby, group president of Triumph Aerospace Systems Group, was named president and chief operating officer of the company. Ill previously held the post and was promoted to chairman. David Kornblatt was promoted from senior vice president to executive vice president, and he remains the company’s chief financial officer.

“Jeff Frisby has made significant contributions to the growth of our aerospace business,” Ill says. “He is a proven member of our leadership team and has played a key role in making Triumph what it is today.”

Frisby has served as group president of the Triumph Aerospace Systems Group since 2003. He first joined the company in 1998, as president of Frisby Aerospace, Inc. when it was acquired by Triumph. He was group president of the Triumph Control Systems Group until the Aerospace Systems Group was formed in April 2003.

Frisby is a member of the board of directors at Quaker Chemical Corporation, and he is on the advisory council to the Wayne Calloway School of Business and Accountancy at Wake Forest University. He is an active member of the American Society of Mechanical Engineers, where

he served on the industrial advisory board.

"I am proud to have been part of the Triumph success story over the years and am honored to have been selected as President and COO," Frisby says. "I believe we are well positioned to take advantage of the challenges and opportunities in the aerospace industry today and I look forward to working with Rick, Dave and our operating companies to develop, coordinate and execute strategies that will sustain and grow our business."



## FORMS GEAR VENTURE WITH CHINESE PARTNER

GE Drivetrain Technologies, a unit of GE Transportation, has formed a joint venture company with Chongqing XinXing Fengneng Investment Co., Ltd. to produce large-diameter gears for the wind turbine industry.

Chongqing XinXing Fengneng is the majority owner, and the gears will be manufactured in a new facility in Chongqing, China. Initially, the business will manufacture the gears for GE Drivetrain Technologies' wind turbine gearbox production facility in Shenyang, China. GE Drivetrain and A-Power Energy Systems announced the facility's development as part of a joint venture agreement made in January 2009.

"As a supplier to some of the world's leading automotive and motorcycle companies, Chongqing XinXing brings a world-class manufacturing mentality to the production of wind turbine gears," says Tim Schweikert, president of GE Technology Infrastructure in China.

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